

# Multi-Immersion Objectives

## Dipping Objectives for Cleared Tissue Imaging

Special Optics and [Applied Scientific Instrumentation \(ASI\)](#), a provider of complex life science and light microscopy solutions, have developed two dipping objectives lenses specifically designed for light sheet microscopy of cleared tissue samples, including ASI's dual-view Selective Plane Illumination Microscopy (diSPIM) which enables isotropic resolution without manipulating the sample. These lenses are appealing to researchers building customized microscope setups (e.g. OpenSPIM type) as they are available for separate purchase, unlike other objectives suitable for cleared tissue.

**0.4 N.A. Multi-immersion Objective**, with WD of 12 mm, designed for dipping media RI ranging from 1.33 to 1.56, >1 mm field of view, and ~17x magnification. When used in multi-view systems like the diSPIM, the Special Optics objective lens offers sub-micron resolution in X, Y, and Z. The large working distance enables imaging samples that were previously inaccessible. The objective permits imaging more than 5 mm deep into a flat sample when rotated at a 45° angle above the sample, as used in the diSPIM.

**0.7 N.A. Multi-immersion Objective**, with WD of 10 mm, is also designed for dipping

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Immersion Media RI	1.33 - 1.56	1.33 - 1.56	Includes all major clearing solutions
Effective Focal Length	12 mm @ RI 1.45	10 mm @ RI 1.45	Magnification proportional to RI
Working Distance	12 mm (for all RI)	10 mm (for all RI)	
Flat Sample Depth	5.1 mm	2.0 mm	Imaging depth into flat sample at 45 degree tilt
Field of View	1.2 mm Ø	1.0 mm Ø	
Spherical Correction	480 - 1000 nm	480 - 1300 nm	Diffraction limited for most media and $\lambda$
Chromatic Correction	480 - 720 nm	480 - 720 nm	Performance varies by media. Optimized for CLARITY and TDE
Correction Collar	None	None	Designed for immersion w/o coverslip
Parfocal Length	61.6 mm	83 mm	Both have M25 threads

For additional information please contact Craig Fitzgerald at [craig.fitzgerald@navitar.com](mailto:craig.fitzgerald@navitar.com).

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- FocusClear (CLARITY)
  - Glycerol
  - CUBIC-1, CUBIC-2, CUBIC-R1, CUBIC-R2
  - Mineral oil
  - Silicone oil
  - TDE (2,2-thiodiethanol)
  - Ethyl cinnamate
  - Benzyl benzoate and BB-PEG (PEGASOS)
  - BABB
  - DBE (dibenzyl ether)
  - 100% ethanol
  - other proprietary organic media

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